

WHAT IS CLAIMED IS:

1. A pure polypeptide comprising an amino acid sequence at least 70% identical to SEQ ID NO:7, 8, or 9, wherein the polypeptide regulates expression of a gene in a cell.
2. The polypeptide of claim 1, wherein the amino acid sequence is at least 80% identical to SEQ ID NO:7, 8, or 9.
3. The polypeptide of claim 2, wherein the amino acid sequence is at least 90% identical to SEQ ID NO:7, 8, or 9.
4. The polypeptide of claim 3, wherein the amino acid sequence is at least 95% identical to SEQ ID NO:7, 8, or 9.
5. The polypeptide of claim 4, wherein the amino acid sequence is SEQ ID NO:7, 8, or 9.
6. The polypeptide of claim 1, wherein the cell is a plant cell.
7. The polypeptide of claim 6, wherein the cell is a monocot plant cell.
8. The polypeptide of claim 7, wherein the cell is a cereal plant cell.
9. The polypeptide of claim 8, wherein the cell is a rice cell.
10. The polypeptide of claim 8, wherein the cell is a barley cell.
11. The polypeptide of claim 1, wherein the expression of the gene is driven by a promoter containing one or more copies of a TATCCA sequence.
12. The polypeptide of claim 11, wherein the cell is a plant cell.

13. The polypeptide of claim 1, wherein the cell expresses an HvMYBGa protein.
14. The polypeptide of claim 13, wherein the cell is a plant cell.
15. The polypeptide of claim 13, wherein the expression of the gene is driven by a promoter containing one or more copies of a TATCCA sequence.
16. The polypeptide of claim 15, wherein the cell is a plant cell.
17. An isolated nucleic acid characterized in that it hybridizes under stringent conditions to SEQ ID NO:1, 2, or 3, or a complementary sequence thereof.
18. The nucleic acid of claim 17, wherein the nucleic acid is SEQ ID NO:1, 2, or 3, or a complementary sequence thereof.
19. The nucleic acid of claim 17, wherein the nucleic acid encodes a polypeptide of claim 1.
20. The nucleic acid of claim 19, wherein the nucleic acid encodes a polypeptide of claim 5.
21. An antibody against a polypeptide of SEQ ID NO:7, 8, or 9.
22. A cell comprising a nucleic acid of claim 17, wherein the nucleic acid is expressed.
23. The cell of claim 22, wherein the cell comprises a nucleic acid of claim 20.
24. A transgenic plant comprising a transgene that contains a nucleic acid of claim 17, wherein the nucleic acid is expressed.

25. The transgenic plant of claim 24, wherein the plant is a monocot plant.
26. The transgenic plant of claim 25, wherein the plant is a cereal plant.
27. The transgenic plant of claim 26, wherein the plant is rice.
28. The transgenic plant of claim 26, wherein the plant is barley.
29. The transgenic plant of claim 24, wherein the transgene contains a nucleic acid of claim 20.
30. The transgenic plant of claim 29, wherein the plant is a monocot plant.
31. The transgenic plant of claim 30, wherein the plant is a cereal plant.
32. The transgenic plant of claim 31, wherein the plant is rice.
33. The transgenic plant of claim 31, wherein the plant is barley.
34. A method of expressing a transcript in a cell, the method comprising:
introducing a vector into a cell, the vector containing a nucleic acid encoding a transcript; and
expressing the transcript in the cell;
wherein the transcript is characterized in that it hybridizes under stringent conditions to SEQ ID NO:1, 2, or 3, or a complementary sequence thereof.
35. The method of claim 34, wherein the nucleic acid encodes a polypeptide of claim 5.

36. A method of identifying a compound that modulates the activity of the polypeptide of claim 1, the method comprising:

introducing a test compound into a system containing a nucleic acid including a promoter containing one or more copies of an element that binds to the polypeptide, the promoter being operably linked to a reporter gene; and

determining an expression level of the reporter gene in the system,

wherein the expression level of the reporter gene in the presence of the test compound, if different from that in the absence of the test compound, indicates that the test compound is a candidate for regulating the activity of the polypeptide.

37. The method of claim 36, wherein the system is a cell.

38. The method of claim 36, wherein the reporter gene is a LacZ gene, a green fluorescent protein gene, a GUS gene, or a luciferase gene.

39. The method of claim 36, wherein the element is a TATCCA sequence.

40. The method of claim 36, wherein the compound is a polypeptide.

41. The method of claim 36, further comprising introducing into the system the polypeptide of claim 1.